Managing Our Water Resources

by ***Suvarna Ooi***

JURUTERA first met Dato' Ir. Hj. Ahmad Husaini bin Sulaiman, Director General of the Department of Irrigation and Drainage Malaysia (DID), during an interview for the June 2008 issue on water resources engineering. This issue, he talks about the latest updates and the impact of climate change on water resources in Malaysia.

Dato' Ahmad Husaini believes that some of the issues concerning water resources in the country are becoming more critical as it determines the availability of water in the next 20 to 30 years. He said, "Although Malaysia is endowed with abundant rainfall of about 3,000mm annually, mismanagement of the country's water resources could result in water shortage problems nationwide. Going by past experience, there have been numerous occasions when certain parts of the country experienced water scarcity, including the Malacca water crisis, the Kuala Lumpur water crisis, and even in certain areas of Kedah."

Water shortages also occur in some areas due to uneven distribution and demand, seasonal variations of rainfall as well as the rapid pace of socio-economic development. The fact that the total water demand for domestic, industrial and irrigation water use in Malaysia has been on the rise does not help matters. In 2020, the projected water demand is estimated at 20 billion cubic meters.

Even though the country records a high level of rainfall every year, Dato' Ahmad Husaini believes the nation should not be too complacent. He stressed, "Because of this common perception that Malaysia has so much water, we do not really look at how we are managing our water resources. That is why, until today, the country does not have a national water resources policy. In fact, there is no single agency that has been entrusted with the responsibility for integrated planning and management of water resources at the federal or even state level."

As such, the DID has taken the initiative to embark on a comprehensive water resources study as well as to draft a national water resources policy which it hopes to complete by the end of the year. He added, "The policy will involve the federal as well as the various state governments as the issue of water resources is under the jurisdiction of the latter. For a uniformity of policies, there is a need to promote uniformity and cooperation between the states in the management of water resources. The new policy will definitely assist us in solving many issues pertaining to water resources management in this country."

Among some of the issues that the policy will be addressing include environmental conservation, development of inter-state water resources, financing of capital works and cost recovery of water resources projects. Besides the management of available water resources, the policy would also look at how to deal with situations when there is too much water, such as the floods that occurred in Kedah, Kelantan and Terengganu at the end of last year.

Stressing the urgency for the policy, Dato' Ahmad Husaini said, "Let us take, for instance, Sg. Muda, which is a river that runs from Kedah to Pulau Pinang. If something were to occur upstream of the river, it will affect Penang as it relies on Sg Muda for water supply. If we are not careful, we may encounter a situation when Pulau Pinang may one day run out of water supply." As such, he pointed out that the country must have a protocol in place to ensure that such a crisis will never occur.

Dato' Engr. Hj Ahmad Husaini bin Sulaiman

Besides addressing the issue of managing the country's water supply, the other pressing concern is the impact of climate change on existing water resources. To this extent, the Government has engaged the National Hydraulic Institute Malaysia (NAHRIM), of which DID is a committee member, to carry out a study on this matter, which is due to complete by the end of 2010. He said, "NAHRIM has a projected climate change impact for Malaysia until 2050. Thus each agency should make use of the projection to strategise and implement adaptation measures with respect to the agency's roles."

On its part, the DID will be reviewing its design standards in water resources projects to determine whether it is still relevant or not. Dato' Ahmad Husaini said, "We hope that by the end of the study, we will know what the actual scenario is. We are looking at some of these design standards and how we are going to adapt ourselves with this climate change especially in coastal areas. Some of these areas contain coastal bunds and tidal gates which have been designed a long time ago. We need to determine if these gates are capable of dealing with rising sea levels and strong waves, and if the bunds are still adequate."

Dato' Ahmad Husaini pointed out one more important issue, which is the issue of groundwater availability. He said, "At the moment, several agencies are carrying out studies on our groundwater resources. It is very important that we know how much water is available underground as we are looking into the possibility of using groundwater as our water supply. It may surprise the public to know that, despite the number of reservoirs that we have, freshwater is not readily available. As such, agencies such as SYABAS may want to use retention ponds that were built for floods to be used for water supply."

The general public can do their part in preventing a water crisis by adopting the concept of rainwater harvesting. Currently, the majority of Malaysians are using treated water from the tap to water their plants and to wash their cars which leads to a lot of wastage. As such, the DID is going all out to promote the concept of rainwater harvesting to the local authorities, developers and, more importantly, the general public. Dato' Ahmad Husaini said, "The public can install their own rainwater harvesting system in their household although this idea is not so popular at the moment. Perhaps when we conduct more awareness programmes on this, they may see rainwater harvesting as a value for money feature in their homes."

He added, "Currently, NAHRIM is conducting some studies as well as producing guidelines on how to manage rainwater harvesting. And we practise what we preach. Our own buildings have huge tanks for flushing toilets and watering plants. The DID has also carried out more than 10 pilot projects involving various ministries. We have also been promoting to the designers of new buildings to include a rainwater harvesting system." Some of these projects involve the private sector. One very good example is the 1 Utama Shopping Complex which has its own rainwater harvesting system.

As for the public, there are companies that are producing portable rainwater harvesting systems which can be bought off the shelf and installed in one's home. According to Dato' Ahmad Husaini, some developers have already adopted the system as home owners can save on their water bill and use the rainwater for other purposes besides drinking. However, there are also developers who have reservations towards the concept as they feel that the system is costly and may not be well received by home owners.

He said, "With a wider acceptance of the rainwater harvesting concept, the usage of treated water by the public will be a lot lesser. This means the relevant authorities need not supply as much water, and there is less demand for expensive water treatment systems which translates into significant cost savings by the state government."

At the same time, Dato' Ahmad Husaini also believes that the government will also be spending less on flood mitigation projects in time to come. He said, "Although there may seem to be no end to the flood problems in Malaysia at times, the reality is that the Government cannot be always spending more money to deal with flood problems in the country. Flood mitigating projects are very expensive and cost the Government billions of ringgit. A flood mitigation programme is not meant to completely solve the problem of flood. In fact, the public need to understand that it is not possible to avoid floods altogether or to achieve zero flood status. Instead, they should begin to embrace the idea of flood management."

The concept of flood management means that a flood prone area may only experience flood once a year compared to the usual 20 times a year. He explained that, at the moment, the level of public awareness on flood management is still very low. He suggested that perhaps the DID will have to embark on more awareness programmes to inform the public the reason why flood occurs and the kind of floods it should be mitigating. Although the idea of living with floods may seem alien now, he believes the public will begin to slowly accept the inevitable fact in due time.

On the progress of flood mitigation projects by the DID, he said, "So far, we have completed Phase 1 of the Sg. Damansara flood mitigation project. I believe some places such as Taman Tun Dr Ismail have benefitted from this project while certain flood prone areas in Shah Alam no longer suffer from floods. The SMART Tunnel has helped ease the burden for the Sg. Klang catchment and, at the same time, saved Kuala Lumpur from floods numerous times especially during the rainy season." The DID has also embarked on several mega flood mitigation projects for Sg. Muda, Sg. Kelantan, Sg. Sarawak and Sibu. It hopes to complete the major component of these projects by the end of the 10th Malaysia Plan. ■